

TECHNICAL LIBRARY

July 7, 2005

Current Journal Contents
of the
OSM-WRCC Technical Library
1999 Broadway, Suite 3410
P.O. Box 46667
Denver, CO 80201-6667

This is the current compilation of the table-of-contents pages for journals received during the month of June in the Library. Individuals may have copies of specific articles by notifying the librarian either by phone, e-mail, or regular mail service. **(If you have more than one or two articles you want, please send a written or e-mail request.)**

Deborah K. McGinnis, Librarian
FAX (303) 844-1545

Tele: (303) 844-1436
E-mail: dmcginni@osmre.gov

OSM Library Catalog: <http://www.wrcc.osmre.gov/glas/>

NOTICE OF WARNING CONCERNING COPYRIGHT RESTRICTIONS

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted material.

Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specific conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

This institution reserves the right to refuse to accept a copying order if, in its judgment, fulfillment of the order would involve violation of copyright law.

Coal Age

RECEIVED

2005 JUN 13 AM 10:32

OGN-WRC
DENVER, COLORADO

FEATURE ARTICLES

- 34 Longwall USA Returns as National Coal Show
Largest coal equipment exposition takes place during June in Pittsburgh.
- 44 Mine Roof Geology Information System
A method for quantitative void/fracture detection and estimation of rock strength for underground mine roof.

COAL IN THE NEWS

- 6 Rentech presents results of Wyoming clean coal-to-liquids study
- 6 Alcoa to invest \$45 million to supply coal to power Indiana smelter
- 8 CONSOL Energy donates mining maps to Pitt
- 10 Penn Virginia Resource Partners acquires property in W.Va.
- 14 Cinergy and Duke Energy agree to merge
- 18 Massey Energy responds to Wheeling-Pittsburgh lawsuit
- 20 Beyond Horizon: Peabody acquires three former Horizon mines in the Illinois Basin
- 24 Steam cleanup funds go to Buckhannon River Group
- 26 Wilbur Ross is Bullish on Coal
- 31 House bill introduced to clean up abandoned mines

WORLD NEWS

- 7 Overseas investors eye China's coal sector
Turkish mine suffers explosion
Czech coal group posts profit
- 8 BHP Billiton opens Dendrobium coal in Australia
- 18 Australia invests in exploration
Siemens wins Indian upgrade

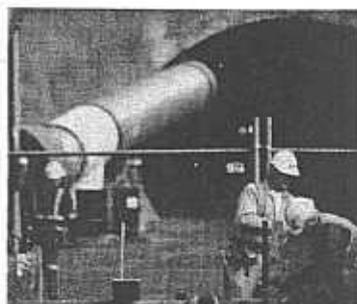
ROSS INTERVIEW / 26



BEYOND HORIZON / 20



WORLD NEWS / 8



THIS ISSUE

This month Coal Age profiles the National Coal Show exhibition, which incorporates Longwall USA. The cover photo is the longwall face at CONSOL Energy's Bailey mine (Photo provided courtesy of DBT America, Photographer: Joe Unitas). Pictured are DBT 2-leg, 882-ton capacity longwall shield supports with PM-4 electro-hydraulic controls. The shields were installed on one of the two faces at CONSOL Energy's Bailey mine in November 2003 and have been operating since that time. During calendar year 2004, this longwall retreated 23,755 feet while mining more than 8 million raw tons. Bailey mine is located in Enon, Pa. Last year it produced 10.1 million clean tons from the Pittsburgh No. 8 coal seam, averaging approximately 5.5-ft thick.

DEPARTMENTS

- 5 Editorial
- 6 Coal in the News
- 7 World News
- 12 People
- 14 Awards
- 30 Calendar
- 52 Marketwatch
- 55 Product News
- 60 Classified
- 64 Legally Speaking

June Cover feature



Bob Murray..... 8
Murray Energy Corporation
by Al Skinner

Coal Mining in Indonesia..... 18
An Interview with Jeffrey Mulyono,
Indonesian Coal Mining Association Chairman
by Tony Sitathan

Peabody's Twenty-Mile Coal Mine Profile..... 20

Annual Underground/Longwall Mining Buyer's Guide..... 23

Mining Our Business..... 42

2005 Coal / AGG Prep Show Pictorial..... 45
photos by CPM staff

2005 Indiana Coal Show Pictorial..... 47

Top 20 United States Underground Coal Producers..... 48

Departments

Editorial..... 6

Coal Calendar..... 57

Coal News Worldwide..... 53

Capsule News..... 50

Coal People in the News..... 55

Product News..... 58

Advertising Index..... 62

Classified..... 60-62

**Buyer-Friendly
Products and Services Reference**

ARCH SUPPORTS
Camber Corporation..... 58

AUTOMATED SAMPLING SYSTEMS
James A. Redding..... 60

BATTERIES
Koehler Lighting Products..... 64 (BC)

BELT CLEANERS
FMC Technologies..... 57

BELT FASTENERS
Persinger Supply Co..... 54

COAL WASHERS
Eagle Iron Works..... 61

CONSTRUCTION TOOLS
Rock Bits, Inc..... 61

CONSULTING SERVICES
GIW Industries..... 60
Marshall Miller & Associates..... 60

CONSULTING SERVICES/ENGINEERS
Cowin & Company..... 60
Norwest Corporation..... 60

CONTRACTING & CONSTRUCTION
Coalfield Services..... 61

CONVEYOR BACKSTOPS
Marland Clutch..... 62

CONVEYOR SOLUTIONS
FLEXCO..... 19 & 21

DISTRIBUTORS-MOR SUPPLIES
Fairmont Supply Co..... 15
United Central Supply..... 64 (BC)

DRILLING CONTRACTORS-UNDERGROUND/SURFACE
Target Drilling..... 2 & 61

ELECTRIC TRACTION DRIVES
Saminco..... 54

ELECTRICAL CONTRACTORS
D & S Electrical Contractors..... 61

ENGINEERING SERVICES
Farnham & Pfile..... 60
Skelly and Loy..... 60

FANS
Paul's Repair Shop..... 61

FILTERS - DISC
Peterson Filters Corporation..... 62

HEALTH PROGRAMS
So. Illinois Respiratory Disease Program..... 61
SW Indiana Respiratory Disease Program..... 61

HYDRAULIC HOSE & FITTINGS
The Cypher Company..... 49

LONGWALL EQUIPMENT DISTRIBUTOR
RM Wilson Co..... 56

LONGWALL MINING MACHINERY
Longwall Associates, Inc..... 53

MINING EQUIPMENT/MANUFACTURING
Cincinnati Mine Machinery..... 17

MINING MACHINERY
Irwin Car & Equipment..... 14
Joy Mining..... 5

MINING TOOLS-UNDERGROUND/SURFACE
Kennametal Inc..... 11

MOTORIZED CONVEYOR PULLEYS
Ruimeca..... 55

PAINTING SERVICES
Gardner Paint Services..... 60

PIPING/FABRICATION
Jabo Supply Corporation..... 61

PIPING/VALVES
Lee Supply..... 51

PREPARATION PLANT-DESIGNERS & BUILDERS
Boyce, Graybeal & Sayre, Inc..... 60
Lincoln Contracting & Equipment..... 60

ROOF BOLTING MACHINES
ARO Mining Products..... 13

ROOF SUPPORT SYSTEMS
J.K. Hydraulics..... 10
Jennmar Corporation..... 63
Strata Products..... 22

SHEARERS
DBT America Inc..... 7

SILOS STACKING TUBES
San-Con Industries..... 61

TIRES & ACCESSORIES
SETCO..... 3
Trojan Tire, Inc..... 52

TRADE SHOWS
Bluefield Coal Show..... 47

VENTILATION SEALS
Richwood Industries..... 50

For More Information on advertisers in this issue
www.coalpeople.com

RECEIVED
2005 JUN 24 AM 9:35
OFF-WRCS
DENVER, COLORADO

FEATURES

Exploration by the Numbers

Shrinking budgets, smaller staffs and larger expectations make data processing and interpretation more important than ever for exploration teams.

34

Sizing Down

The latest developments in crushing and screening technology.

40

Asia Stands at the Crossroads

Demand and investment interest draw delegates to Asian Mining Congress.

45

A Boom Market for Excavators

There's rapid development in loading equipment right across the board.

50

LEADING DEVELOPMENTS

Phelps Dodge Expanding Henderson, May Restart Climax

4

Indonesia Mulls Banning Ore Exports

4

Çaldag Produces First Ni-Co Hydroxide Leach Product

4

Lagunas Norte Commissioning Ahead of Schedule

5

Kansanshi Reaches Commercial Production

5

AROUND THE WORLD

U.S. & Canada: Construction Go-Ahead for Snap Lake

8

Africa: Falconbridge to Manage Kabanga Nickel

14

Asia: Atlas to Raise \$150M for Toledo Copper

16

Australia/Oceania: Rio Tinto Adds to Hamersley Expansions

18

Europe: Aguablanca Ships First Cu-Ni Concentrate

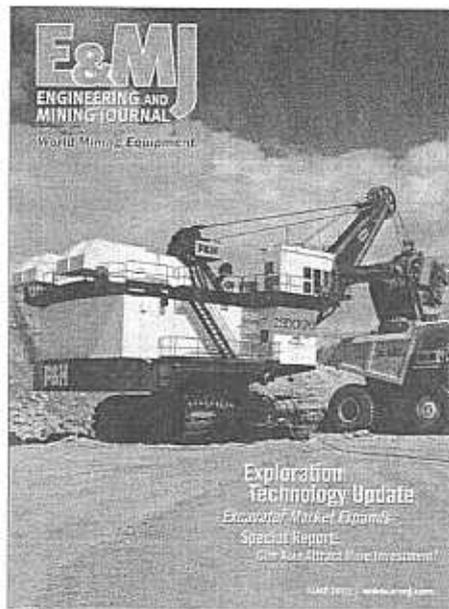
20

Latin America: Alcoa Initiates Jamalco Expansion

28

DEPARTMENTS

Calendar	30
Classified Advertisements	70
Equipment Gallery	62
From the Editor	2
Markets	72
Operating Strategies	54
People	12
Processing Solutions	58
Suppliers Report	60
This Month in Coal	22



A P&H 2800XPB shovel equipped with a P&H Centurion Control System and Loading Control Center at the Cortez Gold Mine near Crescent Valley, Nevada.

INSIDE THIS ISSUE



Crushing and Screening - pg 40



Surface Loading - pg 50

ENR

COVER STORY

► News Analysis

- 10** Two years into reconstruction, Iraq's electrical sector still struggles to keep the lights on. Service falls short of pre-war estimates and efforts to add capacity are hindered by insurgents, fuel shortages, and operator training issues. Officials are refocusing effort to put power on the grid.

Photo left courtesy of Army Corps of Engineers/Maj. Eric Star

FEATURE



Southern California tunneling. Page 22

► Tunnels

- 22** Stymied once by difficult geology and high volume of groundwater inflow, tunnelers in California are working again on the Arrowhead tunnels, part of the \$1.2-billion Inland Feeder project to supply water for towns east of Los Angeles.

NEWS

► Buildings

- 13** Associations: Architects crawl toward integrated project delivery
- 17** Demolition: Multi-building implosion in China clears way for redevelopment

► Transportation

- 14** Legislation: As May 31 deadline nears, another funding extension looms
- 18** Terminals: Officials see green in new Staten Island Ferry Station

► Business & Economics

- 14** Welding: Guesswork is being cut by new predictions method
- 15** Corruption: Justice Dept. says contracts won't pass the smell test
- 16** Safety: Guilty verdict for L.E. Myers Co. in worker's death

► Environment

- 16** Wastewater: EPA sewer overflow decision opens gates for water work



Asbestos in the wind. Page 17

- 17** Asbestos: California rock has builders stepping up dust abatement

DEPARTMENTS

- 5** Letters
- 7** Construction Week
- 9** Washington Observer
- 20** Construction Materials
- 21** Construction Economics
- 25** Products
- 26** Pulse
- 65** Official Proposals (cont. on pp. 66)
- 72** Editorials

- For subscriber services call:
(877) 876-8208 or (609) 426-7046

enr.com

FOR CONSTRUCTION NEWS ON LINE, VISIT
OUR WEBSITE, ENR.COM

Engineering News-Record

The McGraw-Hill Companies

SERVING THE INDUSTRY SINCE 1874

(1860-1948). Executive, editorial, circulation, advertising offices: Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. Postmaster: Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 518, Hightstown, N.J. 08520. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No. 40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPCM Ltd., 4950-2 Walker Road, Windsor, On N9A 6J3. Email: P160rds_gstway@palway.mcgraw-hill.com. Copyright, printing and reprinting: Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2005 by The McGraw-Hill Companies. All rights reserved. Officers of The McGraw-Hill Companies, Inc.: Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer;

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one issue in January and one issue in August by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw

Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penigase, Senior Vice President, Treasury Operations; McGraw-Hill Construction: Norbert W. Young, Jr., FAIA, President; Louis J. Finocchiaro, Vice President and CFO. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of \$1.20 per copy for each article. Send payment to CCC, ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. Printed in the USA. Subscription rates for individuals in the field of the publication: U.S. and possessions, \$62 per year (single copies \$5 in U.S.); Canada and Mexico, \$69 per year; outside North America, \$195 per year. Please allow four to six weeks for shipment. Subscriber service: (877) 876-8208 or (609) 426-7046. For single copies, (212) 904-4634. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 518, Hightstown, N.J. 08520. If possible, attach address label from a recent issue. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2615.

COVER STORY

► Management

26 Facing tougher safety missions on their projects, often with leaner staffs, owners and contractors are building jobsite safety cultures that seek input and cooperation from workers at all levels. Hardhat decals, site posters and reduced injury rates are among signs that the trend is succeeding.

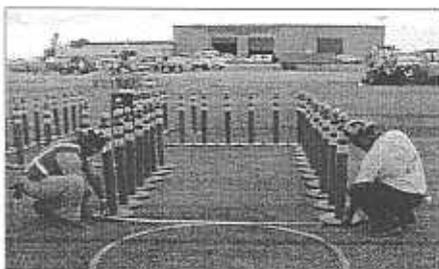
Cover photo and photo right courtesy of BE&K



NEWS

► Business & Economics

10 Crane Safety: California enforces standardized testing for operators



California crane cram. Page 10

19 Information Technology: Security tops worry list, but few use protection

► Buildings

- 11 Fire Safety:** Bills in Congress seek upgrades in dorms and off-campus housing
- 12 Building Permits:** Technology can save regulatory agencies money
- 12 Research:** Neuroscience and health care design team up in study

► Transportation

14 Legislation: Bush signs seventh transportation bill extension

► Environment

- 13 Drinking Water:** London's looming shortages prompt new supply scheme
- 13 Dams:** Bank to require World Commission on Dams compliance
- 14 Nuclear Waste:** Bechtel ups projected cost of Hanford processing plant
- 16 Dams:** Columbia River power system slammed in court ruling



South Carolina chemical plant. Page 16

► Power & Industrial

- 16 Chemical Plants:** New manufacturing process to drive South Carolina plant
- 17 Tidal Power:** Breaching dike will generate power while cleansing lake

DEPARTMENTS

- 5 Calendar
- 7 Construction Week
- 9 Washington Observer
- 19 People
- 20 News in Brief
- 22 Construction Economics
- 31 Products
- 33 Pulse
- 43 Official Proposals (cont. on pp. 44-45)
- 47 Viewpoint
- 48 Editorials

► For subscriber services call:

(877) 876-8208 or (609) 426-7046

enr.com

FOR CONSTRUCTION NEWS ON LINE, VISIT OUR WEBSITE, ENR.COM

Engineering News-Record

The McGraw-Hill Companies

SERVING THE INDUSTRY SINCE 1824

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one issue in January and one issue in August by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw. Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglase, Senior Vice President, Treasury Operations; McGraw-Hill Construction; Norbert W. Young, Jr., FAIA, President; Louis J. Finocchiaro, Vice President and CFO. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of \$1.20 per copy for each article. Send payment to CCC, ISSN 0891-9526/02. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. Printed in the USA. Subscription rates for individuals in the field of the publication: U.S. and possessions, \$62 per year (single copies \$5 in U.S.); Canada and Mexico, \$89 per year; outside North America, \$195 per year. Please allow four to six weeks for shipment. Subscriber service: (877) 876-8208 or (609) 426-7046. For single copies, (212) 904-4634. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 518, Hightstown, N.J. 08520, if possible, attach address label from a recent issue. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

COVER STORY

► Construction Management

24 Imperial Construction Group started life as a specialty contractor, but its management has moved the company closer to public works agencies and it now does millions of dollars worth of construction management.

Cover photo and photo right by Guy Lawrence For ENR



SPECIAL REPORT

► Top 100/Project Delivery

28 Ten years ago, there was a short menu of project delivery choices. Now, as owners become more sophisticated and project delivery firms expand their services, there is a veritable smorgasbord of alternatives.

NEWS

► Transportation

10 News Analysis: Five reasons why the transportation bill is late



Transportation bill stalls. Page 10

13 Fires: Fatal truck blaze shuts alpine tunnel as damage is probed

16 Rigging: NASA lifts up launch towers prior to space shuttle liftoff

18 People: VDOT leader Shucet stepping down with reforms working



Shuttle launcher raised for repairs. Page 16

► Buildings

17 Reconstruction: Sitework begins for 1,000 tsunami-resistant houses

► Business & Economics

12 Public Works: San Francisco municipal bidding rules irk contractors

14 Information Technology: Apostles of open data envision frictionless future

► Environment

13 Landslides: Engineers are probing soil stability at California disaster site

DEPARTMENTS

- 5 Letters
- 7 Construction Week
- 9 Washington Observer
- 19 People
- 21 Construction Economics
- 41 Products
- 58 Pulse
- 66 Official Proposals (cont. on pp. 67-69)
- 72 Editorials

► For subscriber services call:

(877) 878-8208 or (609) 426-7046

enr.com

FOR CONSTRUCTION NEWS ON LINE, VISIT OUR WEBSITE, ENR.COM

Engineering News-Record

The McGraw-Hill Companies

SERVING THE INDUSTRY SINCE 1874

(1860-1948). Executive, editorial, circulation, advertising offices: Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. Postmaster: Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 518, Hightstown, N.J. 08520. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No. 40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 4960-2 Walker Road, Windsor, ON N8A 6J1. Email: P1Bords_gelway@gelway.mcgraw-hill.com. Copyright, printing and reprinting: Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2005 by The McGraw-Hill Companies. All rights reserved. Officers of The McGraw-Hill Companies, Inc.: Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer;

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one issue in January and one issue in August by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw

Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglass, Senior Vice President, Treasury Operations. McGraw-Hill Construction: Norbert W. Young, Jr., FAIA, President; Louis J. Finocchiaro, Vice President and CFO. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of \$1.20 per copy for each article. Send payment to CCC. ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. Printed in the USA. Subscription rates for individuals in the field of the publication: U.S. and possessions, \$82 per year (single copies \$5 in U.S.); Canada and Mexico, \$89 per year; outside North America, \$195 per year. Please allow four to six weeks for shipment. Subscriber service: (877) 878-8208 or (609) 426-7046. For single copies, (212) 904-4634. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 518, Hightstown, N.J. 08520. If possible, attach address label from a recent issue. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2615.

COVER STORY

► Airports

48 Airport construction in the U.S. is entering a new era as information technology and infrastructure is custom-tailored for facilities and shared by airlines. The trend is affecting the way designers and contractors do business.

Cover photo montage by Guy Lawrence for ENR, sign courtesy of KJM Technology Team at Phoenix Sky Harbor, cars by AP/Wideworld; photo right courtesy of Greater Toronto Airports Authority



NEWS

► Business & Economics

10 Work Force: Job market rebounds for the class of 2005



Firms woo grads. Page 10

13 Professional Practice: Design detail responsibility again at issue in New York

► Environment

17 Technology: Landslide prevention measures are looking up in Canada

► Power & Industrial

13 Clean Air: Air outlook murky following Alabama judge's decision

16 Fuel: Coal gasification holds promise for next generation of powerplants

18 Alternative Energy: Canadian project combines hydrogen and wind systems

► Buildings

11 Demolition: Plutonium structure demolition marks end of Rocky Flats cleanup

12 Building Codes: New York City's long haul toward 2006 code nears end



New York City code overhaul. Page 12

DEPARTMENTS

- 5 Letters
- 7 Construction Week
- 9 Washington Observer
- 19 People
- 20 Legal
- 45 Construction Economics
- 52 Products
- 53 Pulse
- 59 Official Proposals (cont. on pp. 60-63)
- 64 Editorials

► For subscriber services call:

(877) 876-8208 or (609) 426-7046

enr.com

FOR CONSTRUCTION NEWS ON LINE, VISIT OUR WEBSITE, ENR.COM

Engineering News-Record

The McGraw-Hill Companies

Serving the industry since 1874

Executive, editorial, circulation, advertising offices: Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. Postmaster: Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 518, Hightstown, N.J. 08520. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No. 40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 4960-2 Walker Road, Windsor, On N9A 6J3. Email: P16ords_gaiway@mcgraw-hill.com. Copyright, printing and reprinting: Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2005 by The McGraw-Hill Companies. All rights reserved. Officers of The McGraw-Hill Companies, Inc.: Harold W. McGraw II, Chairman, President, and Chief Executive Officer; Robert J. Bahash, Executive Vice President and Chief Financial Officer;

ENR (Engineering News-Record), (ISSN 0891-9526). Published weekly except for one issue in January and one issue in August by The McGraw-Hill Companies, 1221 Ave. of the Americas, New York, N.Y. 10020. Founder: James H. McGraw

Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Penglass, Senior Vice President, Treasury Operations; McGraw-Hill Construction; Norbert W. Young, Jr., FAIA, President; Louis J. Finocchiaro, Vice President and CEO. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of \$1.00 per copy for each article. Send payment to CCC, ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. Printed in the USA. Subscription rates for individuals in the field of the publication: U.S. and possessions, \$52 per year (single copies \$5 in U.S.); Canada and Mexico, \$69 per year; outside North America, \$195 per year. Please allow four to six weeks for shipment. Subscriber service: (877) 876-8208 or (609) 426-7046. For single copies, (212) 904-4634. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 518, Hightstown, N.J. 08520. If possible, attach address label from a recent issue. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.

RECEIVED
2005 JUN 27 AM 9
ENR-1000
DENVER, COLOGRA



COST REPORT

► Second Quarter

53 Last year's steel crisis has been replaced by dramatic increases in crude oil prices that have sent fuel costs skyward. Delivery costs for materials and prices for petroleum-based products are also effected. Meanwhile, a hot homebuilding market is helping to keep inflation going.

Cover photo and photo above by Paul Hartley for ENR

NEWS

► Business & Economics

10 Management:

Fixing infrastructure is nation's top task

11 Development:

Seven challenges for America's engineers

12 Procurement:

How to buy security upgrades: Very carefully

13 Unions:

Plumbers expel, fine Maddaloni and Patchell

13 Labor: AFL-CIO unrest may lead to building trades split

14 Research: Planning for successful global project development

14 Companies: Gilbane has new post for client satisfaction



New Jersey utility security. Page 12

► Transportation

15 Airports: New management takes on Miami's troubled terminal

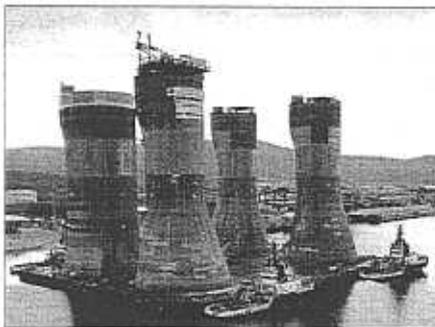
► Environment

15 Drinking Water: Utility industry focuses on infrastructure funding issue

► Power & Industrial

12 Security: Administration says it backs new rules for chemical plants

16 Petroleum: Russia's first oil and gas gravity platform sets sail



Russian oil platform. Page 16

DEPARTMENTS

5 Letters

7 Construction Week

9 Washington Observer

19 Construction Economics

62 Manufacturers' Information

64 Pulse

69 Official Proposals (cont. on pp. 70-71)

72 Editorials

► For subscriber services call:

(877) 876-8208 or (609) 426-7046

enr.com

FOR CONSTRUCTION NEWS ON LINE, VISIT OUR WEBSITE, ENR.COM

Engineering News-Record

The McGraw-Hill Companies

Starting the industry since 1827

(1860-1948). Executive, editorial, circulation, advertising offices: Two Penn Plaza, New York, N.Y. 10121-2298. Phone (212) 512-2000. Postmaster: Please send address changes to ENR/Engineering News-Record, Attention: Fulfillment Manager, P.O. Box 518, Hightstown, N.J. 08520. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Canada Post Publication Mail Agreement No. 40012501. Registered for GST as The McGraw-Hill Companies. GST #R123075673. RETURN UNDELIVERABLE CANADIAN ADDRESSES TO: DPGM Ltd., 4960-2 Walker Road, Windsor, ON N9A 6J3. Email: P16ords_galway@galway.mcgraw-hill.com. Copyright, printing and reprinting: Titles Engineering News-Record (ENR) and CONSTRUCTION WEEK reg. ® in U.S. Patent Office. Copyright © 2005 by The McGraw-Hill Companies. All rights reserved. Officers of The McGraw-Hill Companies, Inc.: Harold W. McGraw III, Chairman, President, and Chief Executive Officer; Robert J. Bahesh, Executive Vice President and Chief Financial Officer;

Kenneth M. Vittor, Executive Vice President and General Counsel; Frank D. Pengjase, Senior Vice President, Treasury Operations. McGraw-Hill Construction: Norbert W. Young, Jr., FAIA, President; Louis J. Finocchiaro, Vice President and CFO. Where necessary, permission is granted by copyright owner for those registered with Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, Mass. 01923, www.copyright.com, to photocopy any article herein for personal or internal reference use only for the flat fee of \$1.00 per copy for each article. Send payment to CCC, ISSN 0891-9526/92. Copying for other than personal or internal reference use without express permission of The McGraw-Hill Companies is prohibited. Write the editor to request such permission. Printed in the USA. Subscription rates for individuals in the field of the publication: U.S. and possessions, \$82 per year (single copies \$5 in U.S.); Canada and Mexico, \$89 per year; outside North America, \$165 per year. Please allow four to six weeks for shipment. Subscriber service: (877) 876-8208 or (609) 426-7046. For single copies, (212) 904-4634. Send all correspondence, notices and subscription orders to Fulfillment Manager, ENR, P.O. Box 518, Hightstown, N.J. 08520. If possible, attach address label from a recent issue. Please allow a month for change of address to take effect. Classified advertising: Send ads to ENR, Classified Advertising, Two Penn Plaza, 9th Floor, New York, NY 10121. Phone (212) 904-2815.



THE
GEOLOGICAL
SOCIETY
OF AMERICA

BULLETIN

RECEIVED

2005 JUN 24 AM 9:47

VOL. 117 • NO. 7/8

JULY/AUGUST 2005

DENVER, CO, COLORADO

The Geological Society of America Bulletin is a leading international journal for major scholarly research in all branches of the earth sciences. Published continuously since 1890.

T A B L E O F C O N T E N T S

PRECAMBRIAN GEOLOGY

- 835–845 **Secular change in the Precambrian silica cycle: Insights from chert petrology**
Robert G. Maliva, Andrew H. Knoll, and Bruce M. Simonson

TECTONICS

- 846–864 **Evolution of a volcanic rifted margin: Southern Red Sea, Ethiopia**
Ellen Wolfenden, Cynthia Ebinger, Gezahegn Yirgu, Paul R. Renne, and Simon P. Kelley
- 865–878 **Cretaceous-Tertiary shortening, basin development, and volcanism in central Tibet**
Paul Kapp, An Yin, T. Mark Harrison, and Lin Ding
- 879–886 **Mapping granite and gneiss in domes along the North Himalayan antiform with ASTER SWIR band ratios**
Doyle R. Watts, Nigel B. W. Harris, and The 2002 NASA GLENN SOARS Working Group
- 887–901 **Processes of oscillatory basin filling and excavation in a tectonically active orogen: Quebrada del Toro Basin, NW Argentina**
George E. Hilley and Manfred R. Strecker
- 902–925 **Stratigraphic and geochemical evolution of an oceanic arc upper crustal section: The Jurassic Talkeetna Volcanic Formation, south-central Alaska**
Peter D. Clift, Amy E. Draut, Peter B. Kelemen, Jerzy Blusztajn, and Andrew Greene
- 926–944 **Isotopic and structural constraints on the location of the Main Central thrust in the Annapurna Range, central Nepal Himalaya**
Aaron J. Martin, Peter G. DeCelles, George E. Gehrels, P. Jonathan Patchett, and Clark Isachsen
- 945–961 **Early Mesozoic thrust tectonics of the northwest Zhejiang region (Southeast China)**
Wenjiao Xiao and Haiqing He
- 962–968 **Evidence for 65 km of dextral slip across Owens Valley, California, since 83 Ma**
Andrew R.C. Kylander-Clark, Drew S. Coleman, Allen F. Glazner, and John M. Bartley
- 969–986 **Reinitiation of subduction and magmatic responses in SW Japan during Neogene time**
Jun-ichi Kimura, Robert J. Stern, and Takeyoshi Yoshida
- 987–995 **Age of the Los Ranchos Formation, Dominican Republic: Timing and tectonic setting of primitive island arc volcanism in the Caribbean region**
Stephen E. Kesler, Ian H. Campbell, and Charlotte M. Allen

NEOTECTONICS/PALEOSEISMICITY

- 996–1008 **Evidence for possible precursor events of megathrust earthquakes on the west coast of North America**
Andrea D. Hawkes, David B. Scott, Jere H. Lipps, and Rod Combellick
- 1009–1032 **Tsunami history of an Oregon coastal lake reveals a 4600 yr record of great earthquakes on the Cascadia subduction zone**
Harvey M. Kelsey, Alan R. Nelson, Eileen Hemphill-Haley, and Robert C. Witter

GEOMORPHOLOGY/SURFACE PROCESSES

- 1033–1050 **Submarine landforms and the reconstruction of fast-flowing ice streams within a large Quaternary ice sheet: The 2500-km-long Norwegian-Svalbard margin (57°–80°N)**
D. Ottesen, J.A. Dowdeswell, and L. Rise
- 1051–1069 **Late Quaternary eolian and alluvial response to paleoclimate, Canyonlands, southeastern Utah**
Marith C. Reheis, Richard L. Reynolds, Harland Goldstein, Helen M. Roberts, James C. Yount, Yarrow Axford, Linda Scott Cummings, and Nancy Shearin

GEOPHYSICS

- 1070–1080 **Present-day tilting of the Great Lakes region based on water level gauges**
André Moinville and Michael R. Craymer

PALEOCLIMATOLOGY

- 1081–1093 **Glacioeustatic changes in the early and middle Eocene (51–42 Ma): Shallow-water stratigraphy from ODP Leg 189 Site 1171 (South Tasman Rise) and deep-sea $\delta^{18}\text{O}$ records**
Stephen F. Pekar, Audrey Hucks, Michael Fuller, and Shawna Li

VOLCANOLOGY

- 1094–1107 **Assembling an ignimbrite: Compositionally defined eruptive packages in the 1912 Valley of Ten Thousand Smokes ignimbrite, Alaska**
Judy Fierstein and Colin J.N. Wilson

QUATERNARY GEOLOGY/GEOMORPHOLOGY

- 1108–1120 **Cosmogenic exposure dating of late Pleistocene moraine stabilization in Alaska**
Jason P. Briner, Darrell S. Kaufman, William F. Manley, Robert C. Finkel, and Marc W. Caffee

RECEIVED

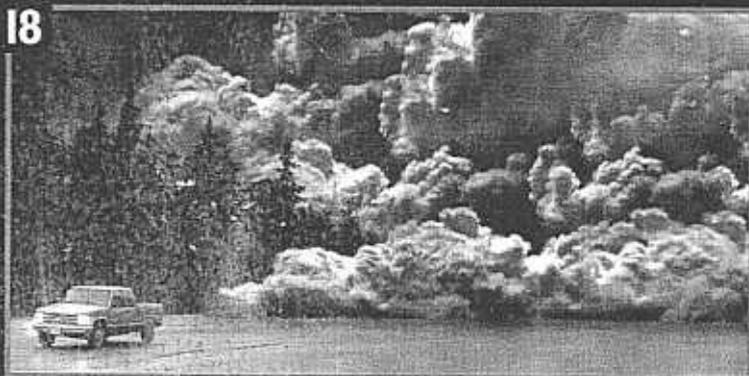
JUNE 2005

vol. 50 = no. 6

2005 JUN -1 AM 9:16

SCIENCE TO SCREEN

18



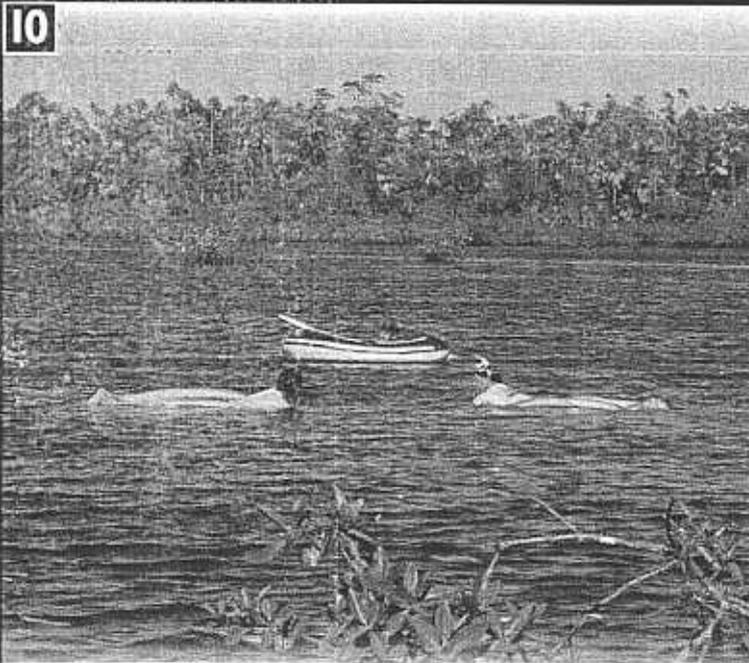
24



30



10



FEATURES BY WRITER NEWELL, COLORADO

18 TRUTH, FICTION AND EVERYTHING IN BETWEEN AT YELLOWSTONE

One of the world's largest volcanic systems sits below Yellowstone National Park, and although the volcano is unlikely to blow soon, interest in such an event is erupting throughout popular media.

Jake Lowenstern

24 NOVEL TAKES ON CLIMATE CHANGE

Two recent science-fiction books take vastly different approaches to covering the science and controversy behind climate change.

Nathan E. Hultman

30 BRINGING DINOSAURS TO LIFE

Cinematic interpretations of the world of the dinosaurs are more engaging and complex than ever, thanks to high-tech computer imaging and new fossil discoveries.

Megan Sever

Plus: Making Science TV News

10



NEWS & VIEWS

8 NEWS NOTES

Cosmic bursts to blame for mass extinction

Odd microbes at Yellowstone

← Salt mass-produced by Maya

Egg-laying dinosaurs

Seeing earthquakes from space

Mammals not out of Africa

Peaks of eternal light on the moon

Revising the asteroid threat scale

Double-crossing the core

New seasonal hurricane prediction

(cont.)

ON THE COVER

Three Jurassic sauropod dinosaurs come to life in these DinoMorph models that replicate their appearances and movements based on the latest in paleontology. *Apatosaurus* and *Diplodocus* (left) are stretching to reach the head height of the giant *Brachiosaurus*. Such models are valuable for documentaries and movies seeking to portray the ancient creatures. Image courtesy of Kent A. Stevens, University of Oregon. Read more about the mak-

**7 COMMENT** Hunting for Science Messages

Rather than shooting out information en masse, scientists need target only a handful of U.S. leaders to influence national science policy decisions.

Rick Borchelt

17 POLITICAL SCENE Water Woes: Predictable But Not Inevitable

With forethought, decision-makers and scientists can work together to mitigate the hydrologic impacts of development.

Eloise Kendy

38 GEOPHENOMENA

Coal-mining-induced earthquakes
Volcanoes in a sensitive climate

40 EDUCATION & OUTREACH Golfer Phil Mickelson on Science

Phil Mickelson and ExxonMobil have teamed up to create an academy to help get science teachers up to par.

Megan Sever

42 ENERGY & RESOURCES

Oil platforms fuel fish farms
Oil pipeline in whale territory
Mineral of the Month: Rhenium

46 GEOMEDIA

Movies: Selling extreme life on the extreme screen
Books: Touring the planet: A review of *Earth: An Intimate History*
On the Shelf: Climate change picks from Kim Stanley Robinson
Maps: New view of North America
On the Web: Yellowstone and dinosaurs

50 PROFILES

Lonnie Thompson: Tracking ice in the tropics

51 BENCHMARKS June 6, 1980

Luis and Walter Alvarez propose an impact explanation for the dinosaurs' demise.

60 GEOLOGIC COLUMN A Discount Department Store University

Many universities are adopting a business model to determine which departments stay and which go, affecting not only the faculty but also the students.

Nicholas H. Tibbs

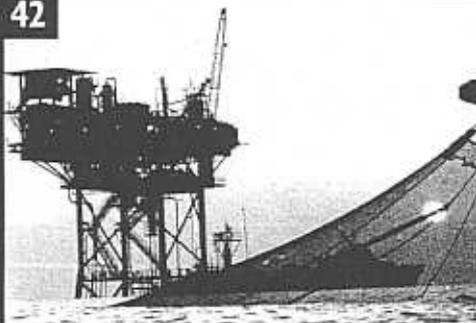
DEPARTMENTS

4 FROM THE EDITOR

6 LETTERS: Perspectives from readers

36 WHERE ON EARTH?**52 GEOMARKETPLACE**

54 CLASSIFIEDS: Career opportunities



Want to attend a geoscience meeting? Visit the online Calendar at calendar.agiweb.org

ON THE WEB AT www.geotimes.org

36

WHERE
ON EARTH?

Contents

JUNE 1, 2005 VOL. 37 NO. 9

FEATURES

Transformers 32

Chief information officers don't just want to make government electronic—they want to electrify it.
By Shane Harris

Armor All 42

The Army pulled out all the stops to fortify Humvees in Iraq, but still couldn't keep up with the demand.
By George Cahlink

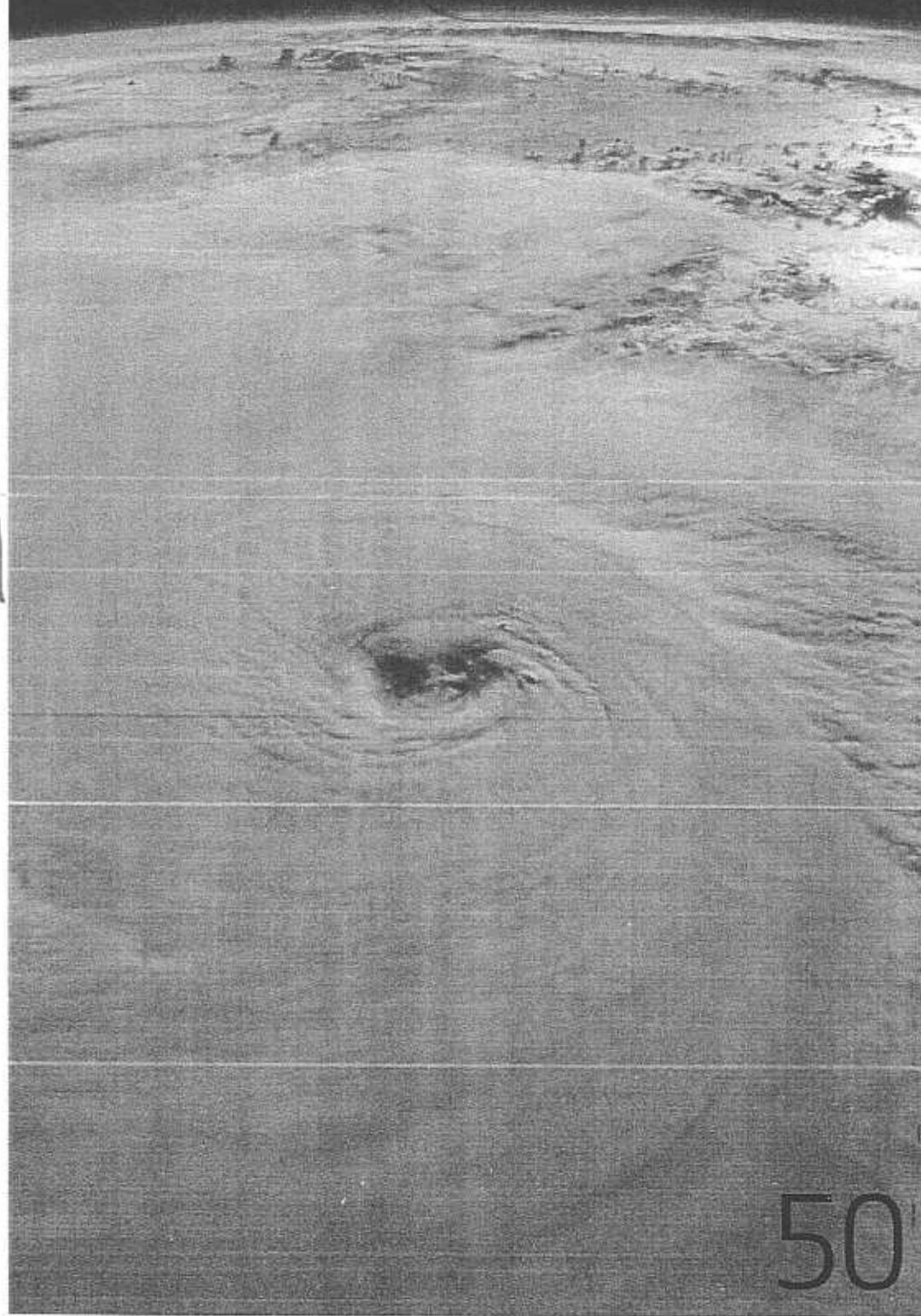
Hurricane Hunters 50

America's other air force does battle with nature.
By Beth Dickey

Battling Backlogs 60

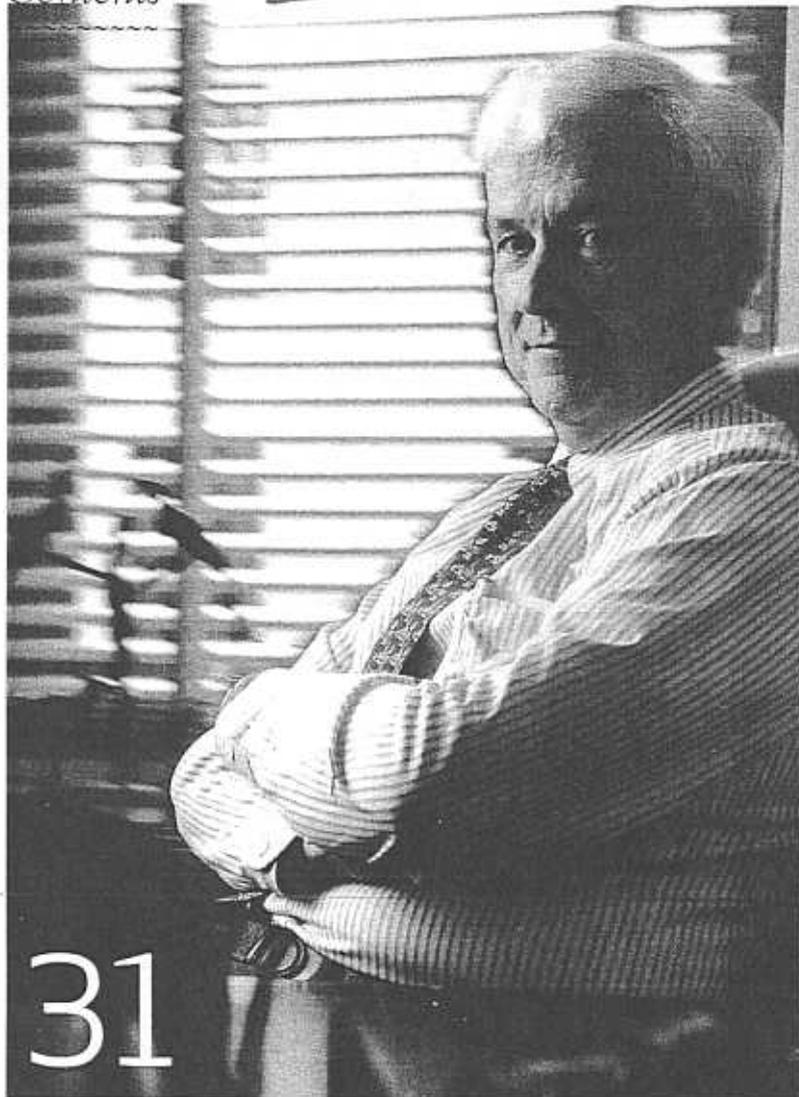
On the front lines of homeland security, workers are struggling to process immigration applications more carefully, yet more quickly.
By Amelia Gruber

(cont.)



50

RECEIVED
Cover photograph
by David Hills

**NEWS+ANALYSIS****Split on Nukes 19**

Critics doubt new office can rein in fragmented nuclear detection campaign. *By Amelia Gruber*

Tougher Audits 25

Two years after Sarbanes-Oxley rocked the private sector financial world, it's coming to government. *By Kimberly Palmer*

Plan B 26

The Federal Emergency Management Agency assumes a larger role in advance preparations. *By Amelia Gruber*

Space Saver 28

NASA expects to conserve millions with a central back-office center. *By Beth Dickey*

The Negotiator 31

Leadership Profile The United States' voice in Sudan seeks peace through pragmatism. *By Shane Harris*

ADVICE+DISSENT**Packing Heat 67**

Tech Insider A new software program will help federal agencies plan for wildfires. *By Denise Kersten*

For the ASKing 70

Management Matters NASA site uses the ancient technique of storytelling to boost management lessons. *By Brian Friel*

Unlikely Suitor 72

Political World In post-9/11 New York and Virginia, some voters jilted the party line in the 2004 election. *By Charles Mahtesian*

Listen Up 74

Viewpoint When employees make sound business cases for change and managers respond, organizations improve. *By Chuck Casto*

IN EVERY ISSUE**Editor's Notebook 8**

Business intelligence helps agencies solve the performance conundrum.

Letters 10**The Buzz 13**

Buying brand names, missing telework plans, a Doobie-ous distinction and Patent Office plans.

Outlook 76

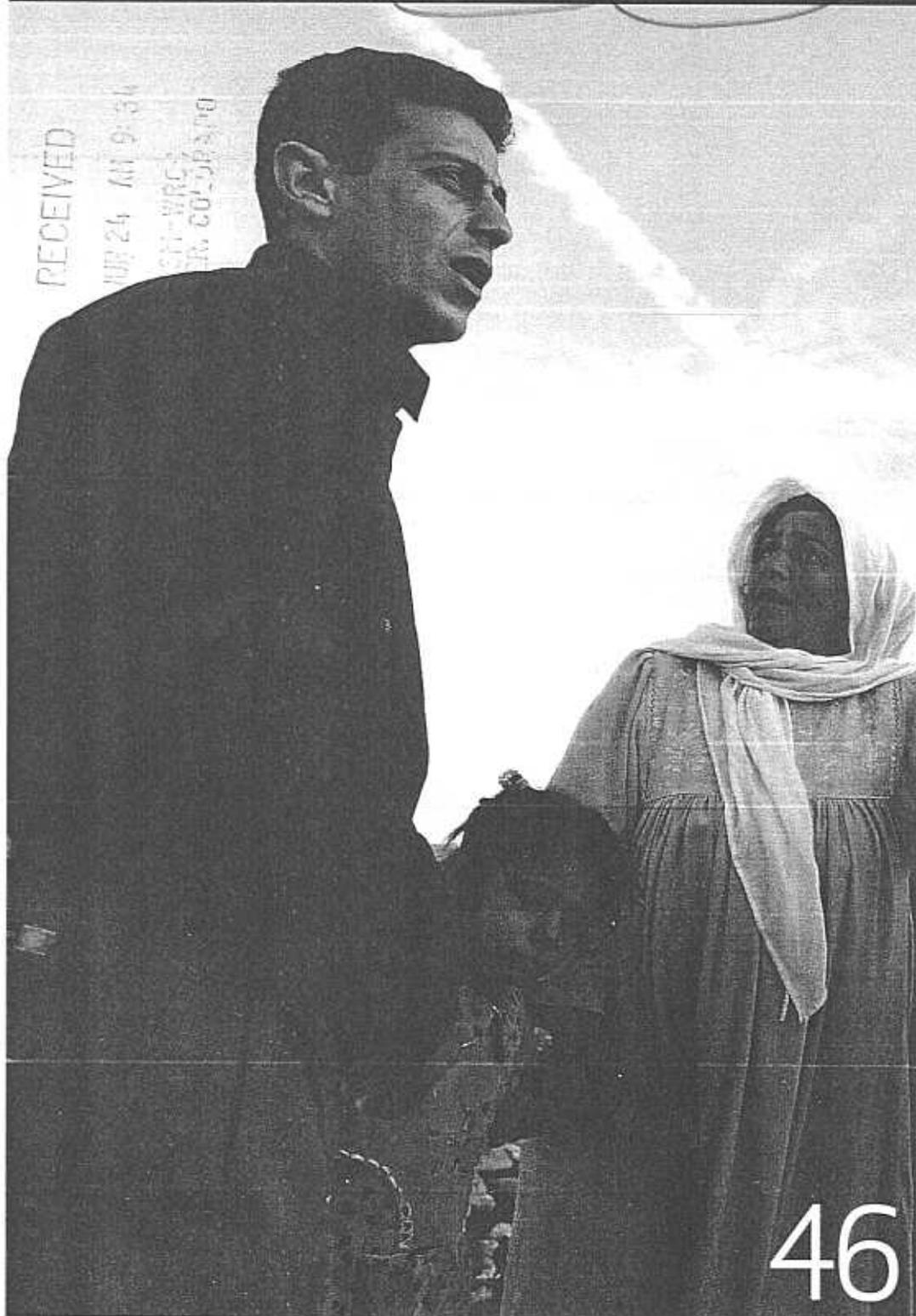
In government, when you spend money on one thing, you have even more to spend on something else! *By Tom Shoop*



Contents

JUNE 15, 2005 VOL. 37 NO. 10

Government Executive



RECEIVED
JUN 24 AM 9:34
EN-VRG
R. COLBY

FEATURES

Hard Labor 28

The traditional federal labor relations system is being crushed under the weight of personnel reform.
By Shawn Zellen

Oversight Overhaul 38

The Defense Contract Management Agency remakes itself to catch up with customers and changes in what the military is buying.
By George Cahlink

At a Loss For Words 46

Foreign language skills can be as vital to battlefield success as any weapon—but they're a lot harder to acquire and maintain.
By Katherine McIntire Peters

Hidden Strength 55

Recently constructed federal buildings are heavily fortified, but you'd never know it.
By Amelia Gruber

46

(cont.)

Cover photograph
by Brooks Kraft / Corbis

Government Executive

Vol. 37, no. 10 (6/15/05)



NEWS+ANALYSIS

Risky Business 17

DHS launches a hiring spree to plug holes in swamped procurement shop.

By Amelia Gruber

Showdown on Shutdowns 20

Base closure panel polls reaction to a plan that collides with more than 200,000 military and civilian jobs.

By George Cahlink

Unequal Rights in Outsourcing Fights 22

Some unions can protest in more places than others. By Amelia Gruber

Global Neighborhood Watch 24

Groups of concerned citizens have reduced street crime. Can they do the same for terrorism? By Shane Harris

ADVICE+DISSENT

Winds of Change 61

Managing Technology Business rules management software helps agencies tame the onslaught of updates.

By Karen D. Schwartz

IN EVERY ISSUE

Editor's Notebook 6

Unions have been staggered by many blows.

Letters 8

The Buzz 11

Benefits bliss, barrier to port protection, no private parks, and more.

Outlook 66

Why does OPM want to make the results of its employee survey look like bad news? By Tom Shoop



Ground Water Monitoring & Remediation

Contents/

Spring 2005, Volume 25, No. 2

RECEIVED

2005 JUN 14 AM 8 53

DEPT-WRF
DENVER, CO 80202

Peer-Reviewed Papers/

- 52/ Comparison of SPME Headspace Analysis to U.S. EPA Method 5030/82608 for MTBE Monitoring
by W.T. Stringfellow and K.-C. Oh
- 59/ Simultaneous Estimation of Diffusive Volatile Organic Compound (VOC) Fluxes and Non-Aqueous Phase Liquid (NAPL) Saturation in the Vadose Zone
by D. Werner, M. Broholm, and P. Höhener
- 68/ Trichlorofluoroethene: A Reactive Tracer for Evaluating Reductive Dechlorination in Large-Diameter Permeable Columns
by J.A. Field, R.L. Reed, J.D. Istok, L. Semprini, P. Bennett, and T.E. Buscheck
- 78/ Real-Time Model Parameter Estimation for Analyzing Transport in Porous Media
by J. Kim, Y. Park, and T.C. Harmon
- 87/ Spatial and Temporal Distribution of Herbicides and Herbicide Degradates in a Shallow Glacial Drift Aquifer/Surface Water System, South-Central Michigan
by G.A. Unterreiner and A.E. Kehew
- 96/ Cost-Optimal Contaminant Plume Management with a Combination of Pump-and-Treat and Physical Barrier Systems
by P. Bayer, M. Finkel, and G. Teutsch
- 107/ Use of Tracers and Isotopes to Evaluate Vulnerability of Water in Domestic Wells to Septic Waste
by I.M. Verstraeten, G.S. Fetterman, M.T. Meyer, T. Bullen, and S.K. Sebree
- 113/ Ground Water Nitrate-Nitrogen Trends in Relation to Urban Development, Helena, Montana, 1971-2003
by V.M. Drake and J.W. Bauder
- 131/ Behavior of a Chlorinated Ethene Plume following Source-Area Treatment with Fenton's Reagent
by F.H. Chapelle, P.M. Bradley, and C.C. Casey
- 142/ Evaluation of a Small Mechanical and Pneumatic Bladder Pump for Water Quality Sampling
by W. McCall

Columns/

- 32/ Treatment Technology: DNAPL and BACTERIA
- 44/ EPA Update: Source Water Protection: What's in It for You?

Departments/

News Briefs/ 6
Industry Announcements/ 154
Equipment News/ 159
Professional Services/ 165
Index of Advertisers/ 168

On the cover/ A spectacular sky surrounds a Superfund site in Colorado.
The photo was submitted by John A. Karatowski.

Editorial Review Board/

Editor/

Paul C. Johnson,
Arizona State University

Associate Editors/

Michael J. Barcelona, *Western Michigan University*
David Huntley, *San Diego University*
Richard L. Johnson, *OGI School of Science and Engineering*
Matthew Lahvis, *Shell Global Solutions Inc.*
Paul D. Lundegard, *Unocal Corp.*
David W. Major, *GeoSyntec Consultants*
William G. Rixey, *University of Houston*

Staff/

Director of Publications/ Thad Plumley
Advertising Manager/ Vickie Wiles
Advertising/ Shelby Fleck, Cindi Taylor

JOURNAL OF SOIL AND WATER CONSERVATION

Vol. 60, no. 3

MAY | JUNE 2005

60A

SOIL CONSERVATION AND SWCS: A FORTY-YEAR RETROSPECTIVE

The success, failures, and the hopes for the Soil and Water Conservation Society's future.

By Max Schnepf

66A

FARMLAND PRESERVATION: INNOVATIVE APPROACHES IN ONTARIO

The prime Ontario agriculture land is fast being used up by non-farm residential lots. What approaches is the province taking?

By Wayne Caldwell and Stewart Hills

68A

ENCLOSING SURFACE DRAINS: WHAT'S THE STORY?

The practice of enclosing small surface drains has many questions surrounding the topic.

By Mari Veliz and Jane Sadler Richards

DEPARTMENTS

50A

HOMEFRONT

Column by the Soil and Water Conservation Society executive director

52A

RAISE YOUR VOICE

Letters to the Editor

55A

VIEWPOINT—JERRY L. HATFIELD

Decision support systems for a farmer's balance.

56A

NOTEBOOK

Conservation News You Can Use

59A

GOING RETRO — CELEBRATING 60 YEARS OF THE JSWC
A 1965, 20th anniversary column from the executive director.

74A

CONSERVOGRAM

The Soil and Water Conservation Society in Action

(cont.)



On the Cover
Cover photo by
PhotoDisc.

Jrnl. of Soil + Water
Conservation

Vol. 60, no. 3 (May/June 2005)



RESEARCH

- 111 THE EFFECT OF SOCIOECONOMIC FACTORS ON THE ADOPTION OF BEST MANAGEMENT PRACTICES IN BEEF CATTLE PRODUCTION
S. Kim, J.M. Gillespie, and K.P. Paudel
- 121 CHALLENGES IN CONDUCTING HYDROLOGIC AND WATER QUALITY RESEARCH IN DRASTICALLY DISTURBED WATERSHEDS
J.V. Bonta
- 134 IRRIGATION RETURN FLOW SOURCING OF SEDIMENT AND FLOW AUGMENTATION IN RECEIVING STREAMS: A CASE STUDY
L.S. Browning, J.W. Bauder, K.E. Hershberger, and H.N. Sessoms
- 142 VARIABLE RAINFALL INTENSITY EFFECTS ON CARBON CHARACTERISTICS OF ERODED SEDIMENTS FROM TWO COASTAL PLAIN ULTISOLS IN GEORGIA
T.C. Strickland, C.C. Truman, and B. Frauenfeld
- 148 TESTING A SPATIALLY-DISTURBED SEDIMENT DELIVERY MODEL (SEDD) IN A FORESTED BASIN BY CESIUM-137 TECHNIQUE
C.D. Stefano, V. Ferro, P. Porto, and S. Rizzo

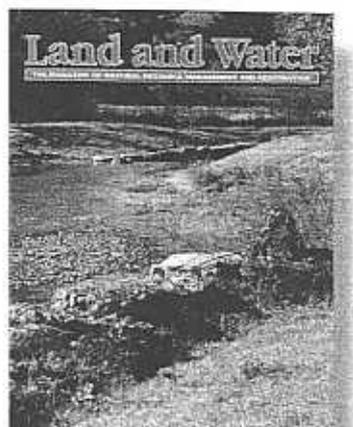
RECEIVED
2005 JUN 13 AM 10:18
D. J. W. R. C. S.
DENVER, COLORADO

Land and Water

THE MAGAZINE OF NATURAL RESOURCE MANAGEMENT AND RESTORATION

Volume 49, Number 3

May/June 2005



Cover Story

The Knapps Creek natural stream restoration project is an ongoing demonstration project in Pocahontas County, West Virginia. This view is post-construction, looking downstream along the beginning of the re-constructed channel. Note the sloped banks with re-established grass, rock vane, and woody transplants to protect the streambank. See story on page 6.

Features

STREAM RESTORATION

- 6 Knapps Creek Demonstration Project
- 13 Escambia Creek Returned to Its Original Channel
by Bob Oertel

SHORELINE STABILIZATION

- 17 New Jersey Community Pines for Beach Season
by JoAnne Castagna

LAND RECLAMATION

- 21 Snake River Gravel Pit Project

RETAINING WALLS

- 26 Flexibility and Minimal Visual Impact Key to Supporting Power Lines at Olivenhain Dam
by Joe Phillip, Samuel M. Rowdolph and Patricia Stelter

WETLANDS

- 31 Adaptive Management Solutions In Wetland Mitigation
by Peter J. Sharpe

LAND IMPROVEMENT CONTRACTORS OF AMERICA

- 36 I'll Try Anything at Least Once
by Bob Oertel

SEDIMENT CONTROL- NEW TECHNOLOGY

- 40 Maximize Infiltration Efficiency And Minimize Cost

WATER QUALITY

- 46 Life in our Streams: Using Organisms to Evaluate Stream Health

VEGETATION MANAGEMENT

- 52 Identifying and Eliminating North America's Top Invasives

SOIL AMENDMENTS

- 56 Well Rooted for Conservation
by Joe Lora

PONDS- NEW TECHNOLOGY

- 61 Floating Islands As A Pond Management Tool
by Bruce Karis

Departments

- 5 Tell It Like It Is
- 65 Index to Past Articles
- 68 Equip Board
- 70 Advertiser's Index

STAFF

Kenneth M. Rasch
President

Jane Rasch
Vice President/Owner

Amy Dencklau
Publishing Editor
landandwater@frontiernet.net

Shanna Egli
Assistant Editor
weditor@frontiernet.net

Martha Steinkamp
Circulation Manager
lws@frontiernet.net

Bob Oertel
Contributing Writer

Barb Peterson
Accounting

Our new street address is
320 A. Street, Fort Dodge, Iowa 50501

Land and Water (ISSN 0192-9453) is published bimonthly by Land and Water, Inc., 320 A. Street, P.O. Box 1197, Fort Dodge, IA 50501-9925. Telephone (515)576-3191, Fax (515)576-2606. Land and Water is edited for contractors, engineers, architects, government officials and those working in the field of natural resource management and restoration from idea stage through project completion and maintenance. Subscription rates: One year - \$20.00; Two years - \$35.00; Three years - \$50.00; Foreign - add \$12.00 per year. All non-paid subscriptions are mailed on a rotating basis to receive occasional copies at Fort Dodge, Iowa and at additional mailing offices. No part of this publication may be reproduced without the written consent of the publisher. Land and Water assumes no responsibility for statements expressed by contributors.

RECEIVED

2005 JUN 15 AM 9:07

Den-WRL
DENVER, COLORADO

Mining

ENGINEERING

VOL. 57, NO. 6 JUNE 2005

INDUSTRIAL MINERALS 2004

COVER STORY



COVER —

The June issue features the annual industrial minerals review. Also offered is a meeting summary, and selected exhibitor profiles, from the 2005 SME Annual Meeting and Exhibit held in Salt Lake City, UT. Cover artwork by Karen Cannon.

Copyright 2005 by the Society for Mining, Metallurgy, and Exploration, Inc. All rights reserved. MINING ENGINEERING (ISSN 0026-5197) is published monthly by the Society for Mining, Metallurgy, and Exploration, Inc., at 8307 Shaffer Parkway, Littleton, CO, 80127-4102. Phone 7-800-763-3132 or 303-973-9550. Fax: 303-973-3845 or e-mail: sme@smanet.org. Website: www.smanet.org. Periodicals postage paid at Littleton, CO and additional mailing offices. Canadian post: publications mail agreement number 0689688. **POSTMASTER:** Send changes of address to MINING ENGINEERING, 8307 Shaffer Parkway, Littleton, CO, 80127-4102. Article copies and back issues available on microfilm or microfiche from the Linda Hall Library in Kansas City, MO. Printed by Cummings Printing Co.

Attapulgit	19	Industrial garnet	37
Ball clay	19	Industrial sand	
Barite	20	and gravel	39
Bauxite and alumina	20	Iodine	39
Bentonite	21	Kaolin	41
Boron	22	Lime	42
Bromine	23	Magnesium compounds	43
Calcium carbonates	24	Nitrogen	44
Cement	25	Peat	45
Common clay and shale	26	Perlite	45
Construction		Phosphate rock	46
aggregates	27	Potash	47
Diatomite	28	Pumice and pumicite	49
Dimension stone	29	Rare earths	50
Feldspar and		Salt	52
nepheline syenite	30	Sillimanite minerals	54
Fire clay	30	Soda ash	55
Fluorspar	31	Strontium	55
Fullers earth	32	Sulfur	56
Gemstones	32	Talc and pyrophyllite	57
Graphite	33	Titanium	59
Gypsum	34	Vermiculite	60
Industrial diamond	36	Zeolites	61
		Zirconium	62

DEPARTMENTS

4	The drift of things
6	Washington survey
8	Mineral economics and finance
10	Industry newswatch
18	Transactions abstracts
86	Coming events
88	New media
89	SME news/Young leaders
93	SME Foundation
94	Rock in the Box/Personal news
95	In the aggregate
97	Obituaries
101	Web directory
108	Professional services advertising

REPRODUCTION: More than one photocopy of an item from SME may be made for internal use, provided fees are paid directly to the Copyright Clearance Center, 27 Congress St., Salem, MA, 01970, USA. Phone 978-750-8400, fax 978-750-4470. Any other form of reproduction requires special permission from, and may be subject to fees by SME. SME is not responsible for any statements made or opinions expressed in its publications. Member subscription rate included in dues. Nonmember subscription rate, \$150; in Europe, \$175. Single copies \$15. July directory issue, \$150.

FEATURE ARTICLES

64

Legislative action important: key message at SME Annual Meeting

Steve Kral

74

Vendors show off latest in mining technology at SME Exhibit

Steve Kral, Georgene Renner and William R. Yernberg

PAY DIRT

MAGAZINE

A Voice For Western Mining Since 1938

May 2005

Cover Story: Capital for Cananea

Mining in the West

Revett provides factions about judge's ruling on Rock Creek • Phelps Dodge gets approval for land exchange at Safford • Shortage of haulage-truck tires expected to run through '07 • Cambior puts permitted Carlota deposit on the market • More high-grade is hit at French Gulch mine • EIS set for March 2006 for Idaho Cobalt project • Two new gold zones found at Copperstone • Golden Phoenix boosts moly-milling capacity

Energy

Smith Ranch-Highland uranium mine plans production increase • PRB coal is finally commanding higher price

Governments and Mining

Navajo Nation bans uranium mining, processing on its rez • Resolution moving on land swap to aid with copper mine • Colorado doesn't like Fraser study methods • Alaskan miners want taxing consistency • Gerard leaving helm of National Mining Association

Environment

Newmont teams with medical school to assess health issues • New rule brings local agencies into EIS work • Cardoza bill to move ESA work out of court • States ask appeals court to force GHG regulation • Fired whistleblowers' suit vs. Newmont is dismissed

The Business of Mining

Freeport finally recovering from slippage with \$130.4 million net • Rising prices for PRB coal aid Peabody's earnings growth • Newmont's cash flow suffers as output falls and costs rise • Higher moly, copper prices give PD record quarterly net • Investors like merger of Noranda, Falconbridge • Royal Gold's 'holdings' increase by 2.2 million ounces

Commentary, 2; Ad Index, 6; Mexico, 8; Peru, 9; Chile, 10; Canada, 11; Latin America, 12; World, 13; Western Briefs, 14; Energy Briefs, 16; Metals, 25; Earnings, 26; Companies and Markets, 27; Miners in the News, 29; Directory, 30; Safety, Health & Labor, 31; Low Grade, 32

On the Cover

This 1983 photo shows an "old" Cananea copper mine in northern Sonora, at a time when a smelter with uncontrolled reverberatory furnaces was still operating. Since that time, Cananea has lost its smelter to its sister operation at Nacozari, has gone heavily into SX/EW and has made numerous other improvements. Now a part of a New York Stock Exchange-listed company, Cananea can expect continued growth.

PAY DIRT

Magazine

William C. Epler

*Publisher and Editor
1968-1995*

William B. Sullivan

*Publisher
1995-1999*

Gary Dillard
Editor

Dan Eyde • Ted Eyde

George Leaming

Clarence Ellis

Chug-A-Lug

Correspondents

Frank Barco

Production Manager

Lupe A. Silva

Adelina Espinoza

Rosina M. Hernandez

Production Staff

Caryl L. Larkins

Advertising Sales/Circulation

Mary Farrington

Office Staff

Doug Harris

Maintenance Manager

PAY DIRT (USPS 424-000)

P.O. Drawer 48, Copper Queen Plaza
Bisbee, AZ 85603

(520) 432-2244; FAX (520) 432-2247

E-mail: paydirt@theriven.com

PAY DIRT is published monthly by
Copper Queen Publishing Co. Inc.

Subscription Rates

Single copy	\$ 3.00
One year	\$30.00
Two years	\$55.00
Three years	\$75.00

Canadian subscriptions add \$10.00 per year;
foreign subscriptions add \$50.00 per year

Advertising Rates

For information call (520) 432-2244

Periodical postage paid at Bisbee, AZ 85603

Postmaster: Please send Form 3579 to:

PAY DIRT, P.O. Drawer 48, Bisbee, AZ 85603

2005 JUN 13 AM 10:34

**Volume 27 No. 1
February 2005**

Published bimonthly:

February, April, June, August, October, December

Copyright 2005 by the Society for Range Management

EDITOR IN CHIEF

Gary Frasier7820 Stag Hollow
Loveland, Colorado 80538
(970) 663-3094
E-Mail: gfrasier@aol.com

MANAGING EDITOR

Peter BurnsAllen Press, Inc.
810 East 10th Street
Lawrence, KS 66006
(785) 843-1234 ext. 187
E-Mail: pburns@allenpress.com

BOOK REVIEW EDITOR

David L. ScarnecchiaDept. Natural Res. Sci.
Washington State University
Pullman, Washington 99164-6410
E-Mail: scarneda@mail.wsu.edu

EDITORIAL BOARD

2002-2004

Jon Bates, Burns, Oregon
James Brunner, Medford, Oregon
Jay Davison, Fallon, Nevada
Jerry Dodd, Lawton, Oklahoma
Marilyn J. Samuel, Lehigh Acres, Florida
Tom Monoco, Logan, Utah

2003-2005

Lynn Huntsinger, El Cerrito, California
John Mitchell, Fort Collins, Colorado
Kim McReynolds, Wilcox, Arizona
Ed Smith, Minden, Nevada
Lori Ziegenhagen, Burns, Oregon

2004-2006

David Bradford, Paonia, Colorado
Michael Frisina, Butte, Montana
Dustin Johnson, Burns, Oregon
Art Meen, Douglas, Arizona

RANGELANDS (ISSN 0190-0528) is the official publication of the Society for Range Management (SRM) and is published bimonthly in February, April, June, August, October, and December. Publishing services are provided by Alliance Communications Group, 810 East 10th Street, Lawrence, Kansas 66044. SRM members receive *Rangelands* as a benefit of membership. Calendar-year subscription prices are \$120.00–160.00 for institutions. Additional surface charges may apply to subscribers located outside of the USA. The online version of *Rangelands* can be found online at www.srmjournals.org. Subscriptions, changes of address, and requests for missing issues should be sent to Allen Marketing & Management, P.O. Box 7065, Lawrence, Kansas 66044.

Editorial correspondence should be addressed to Gary Frasier, 7820 Stag Hollow, Loveland, CO 80538. Page proofs should be returned to the Managing Editor, Peter Burns, 810 East 10th Street, Lawrence, KS 66044.

PERIODICALS POSTAGE paid at Denver, Colorado, and additional offices.

POSTMASTER: Address service requested to *Rangelands*, P.O. Box 7065, Lawrence, Kansas 66044.

PRINTED IN USA

Columns

- 2 Exciting Changes in SRM Publications
Mort Kothmann
- 5 Frasier's Philosophy

Feature Articles

- 7 Forage Kochia—Uzbekistan's Desert Alfalfa
B. L. Waldron, R. D. Harrison, A. Rabbimov, T. C. Mukimov, S. Y. Yusupov, and G. Tursvnova
- 13 Annual Wheatgrass: A New Look at an Old Invasive Range Weed
James A. Young and Charlie D. Clements
- 18 Prescribed Burning Cooperatives: Empowering and Equipping Ranchers to Manage Rangelands
Charles A. Taylor, Jr.
- 24 Grassbanks: Bartering for Conservation
Stephanie Lynn Grippe

Historical

- 29 Lewis and Clark, Pioneering Rangeland Managers?
Richard H. Hart

Technology/Methods

- 31 What Exactly Are Your Sheep Eating?
Christine W. Royer, R. D. Horrocks, Val J. Anderson, and Steven Monsen
- 35 Safe Harbor: Helping Landowners Help Endangered Species
Ted Toombs

Youth Forum

- 37 Forage Productivity of Rangeland Along the Santa Fe Trail in 1846
Ginger Goodan

View Points

- 41 The Semantics of Sagebrush
Jim Brunner

Departments

- | | | | |
|----|--|----|--|
| 42 | Listening to the Land | 51 | Highlights, <i>Rangeland Ecology & Management</i> , January 2005 |
| 44 | The State of the Range Curricula
<i>Wayne Leininger</i> | 53 | Browsing the Literature |
| 46 | Fifth in a Series: Insight From SRM's Charter Members | 56 | The Recipe Corner |
| 49 | SRM Section News | 57 | Book Reviews |

Cover: Elk wintering on the Montana Department of Fish, Wildlife and Parks Fleecer Wildlife Management Area in southwest Montana. The photographer is Michael R. Frisina. Fleecer Wildlife Management Area was featured in an article entitled "Grazing Private and Public Land to Improve the Fleecer Elk Winter Range," by Michael R. Frisina and Forest G. Morin in *Rangelands*, 13(6), December 1991:291–294. The photo was taken on January 26, 1992.

Rangelands



**Volume 27 No. 3
June 2005**

Published bimonthly:
February, April, June, August, October, December
Copyright 2005 by the Society for Range Management

EDITOR-IN-CHIEF

Gary Frasier
7820 Stag Hollow
Loveland, Colorado 80538
(970) 663-3094
E-Mail: gfrasier@arj.com

MANAGING EDITOR

Peter Burns
Allen Press, Inc.
810 East 10th Street
Lawrence, Kansas 66044
(785) 843-1234 ext. 187
E-Mail: pburns@allenpress.com

BOOK REVIEW EDITOR

David L. Scarnecchia
Dept. Natural Res. Sci.
Washington State University
Pullman, Washington 99164-6410
E-Mail: dscarnecchia@mail.wsu.edu

RANGELANDS STEERING COMMITTEE

Dave Bradford - Co-chair
Ed Fredrickson - Co-chair
Mike Frisina
Robbie Baird LeValley
Kim McReynolds
John Mitchell
Sandy Wyman
Lori Ziegenhagen

RANGELANDS EDITORIAL BOARD

John Mitchell, Fort Collins, Colorado - Chair
Jon Bates, Burns, Oregon
Dave Bradford, Paonia, Colorado
James Brunner, Medford, Oregon
Jay Davison, Fallon, Nevada
Jerry Dodd, Lawton, Oklahoma
Mike Frisina, Butte, Montana
Lynn Huntsinger, El Cerrito, California
Dustin Johnson, Burns, Oregon
Kim McReynolds, Wilcox, Arizona
Art Meen, Douglas, Arizona
Tom Monoco, Logan, Utah
Marilyn Samuel, Lehigh Acres, Florida
Ed Smith, Minden, Nevada
Lori Ziegenhagen, Burns, Oregon

RANGELANDS (ISSN 0190-0528) is the official publication of the Society for Range Management (SRM) and is published bimonthly in February, April, June, August, October, and December. Publishing services are provided by Alliance Communications Group, 810 East 10th Street, Lawrence, Kansas 66044. SRM members receive Rangelands as a benefit of membership. Calendar year subscription prices are \$120.00-160.00 for institutions. Additional surface charges may apply to subscribers located outside of the USA. The online version of Rangelands can be found online at www.srmjournals.org. Subscriptions, changes of address, and requests for missing issues should be sent to Allen Marketing & Management, P.O. Box 7065, Lawrence, Kansas 66044.

Editorial correspondence should be addressed to Gary Frasier, 7820 Stag Hollow, Loveland, Colorado 80538. Page proofs should be returned to the Managing Editor, Peter Burns, 810 East 10th Street, Lawrence, Kansas 66044.

PERIODICALS POSTAGE paid at Denver, Colorado, and additional offices.

POSTMASTER: Address service requested to Rangelands, P.O. Box 7065, Lawrence, Kansas 66044.

PRINTED IN USA

U.S. Forest Service—100th Anniversary

Guest Editor: John E. Mitchell, Rangeland Scientist, USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO 80526

- 2 A Century of Rangeland Conservation in the Forest Service
Dale Bosworth
- 3 Forest Service, Rocky Mountain Region Centennial Forum: Summary Essay
Ed Marston
- 6 Natural Resource Management: The Next 100 Years
Eleanor Towns
- 10 Sustainable Management on the Ground
Bob Budd
- 14 Crisis Management: Challenge and Controversy in Forest Service History
Char Miller
- 19 Back to the Future: Forest Service Rangeland Research and Management
John E. Mitchell, Peter F. Ffolliott, and Marcia Patton-Mallory
- 29 "Doing the Best We Could With What We Had": USFS Range Research in the Southwest
Susan Deaver Olberding, John E. Mitchell, and Margaret M. Moore
- 37 Evolving Views of Public Land Values and Management of Natural Resources
Thomas M. Quigley
- 45 A Century of Managing Rangelands on National Forests
Floyd Reed, David Bradford, and Justin McConkey

Departments

- | | | | |
|----|--|----|--------------------------------------|
| 50 | Vancouver, British Columbia: Host City for SRM 2006
<i>Michael Borman and Cindy Meays</i> | 70 | Browsing the Literature |
| 53 | SRM Honor Awards | 73 | The Recipe Corner |
| 64 | Seventh in a Series: Insight From SRM's Charter Members | 74 | Listening to the Land |
| 67 | Highlights, Rangeland Ecology & Management, May 2005 | 76 | Frasier's Philosophy |
| | | 77 | Ask the Expert |
| | | 79 | Book Reviews |
| | | 81 | Society for Range Management Members |
| | | 84 | Poetry, Letters to the Editor |

Front Cover: The Desert Experimental Range in western Utah is appropriately pictured at the end of a rainbow. For 70 years this research facility has been a "pot of gold" of research information about the cold desert shrub biome. It was designated as a Biosphere Reserve in 1976 by the UN Man and the Biosphere Program. This picture, provided by Stanley Kitchner of the Rocky Mountain Research Station, was taken by Ralph Holmgren, a rangeland scientist at the Desert Experimental Station from the 1950s to the 1970s. **Back Cover:** Ranger inspecting a Black Hills grazing allotment, perhaps northwest of Deerfield, South Dakota, in September 1935. Photo courtesy of USDA Forest Service.

Cover: Eastern fence lizards (*Sceloporus undulatus*) are sit-and-wait predators that might facilitate plant establishment in glade communities undergoing restoration. See related article by Van Zandt et al. on page 312. Photo credit: Paul M. Ffime.

Contents

- EDITORIAL 239 The Future of *Restoration Ecology*: Challenges and Opportunities, R. J. Hobbs
- ARTICLES 242 Clay-Turbid Interactions May Not Cascade—A Reminder for Lake Managers, J. Horppila and A. Liljendahl-Nurminen
- 247 Habitat Restoration as a Means of Controlling Non-Native Fish in a Mojave Desert Oasis, G. G. Scoppettone, P. H. Rissler, C. Gourley, and C. Martinez
- 257 Reestablishing Roots of a Mohawk Community and a Culturally Significant Plant: Sweetgrass, D. J. Shebitz and R. W. Kimmerer
- 265 The Restoration of Plant-Pollinator Interactions in Hay Meadows, M. L. Forup and J. Memmott
- 275 Avian Use of Restoration Plantings along a Creek Linking Rainforest Patches on the Atherton Tablelands, North Queensland, A. Jansen
- 284 Coastal Dune Forest Development and the Regeneration of Millipede Communities, B. H. Redi, R. J. van Aarde, and T. D. Wassenaar
- 292 Establishing Native Grasses in a Big Sagebrush-Dominated Site: An Intermediate Restoration Step, E. Huber-Sannwald and D. A. Pyke
- 302 Catchment Liming to Restore Degraded, Acidified Heathlands and Moorland Pools, E. Dorland, L. J. L. van den Berg, E. Brouwer, J. G. M. Roelofs, and R. Bobbink
- 312 Implications of Food Web Interactions for Restoration of Missouri Ozark Glade Habitats, P. A. Van Zandt, E. Collins, J. B. Losos, and J. M. Chase
- 318 Invading Monotypic Stands of *Phalaris arundinacea*: A Test of Fire, Herbicide, and Woody and Herbaceous Native Plant Groups, R. D. Foster and P. R. Wetzel
- 325 Effects of Mycorrhizae and Nontarget Organisms on Restoration of a Seasonal Tropical Forest in Quintana Roo, Mexico: Factors Limiting Tree Establishment, M. F. Allen, E. B. Allen, and A. Gómez-Pompa

(cont.)

RECEIVED
2005 JUN 13 AM 10:27
DSR-WRC
NEW YORK, NY 10020

Restoration
Ecology

Vol. 13, no. 2
(06/2005)

SPECIAL SECTION:
RESOURCE HETEROGENEITY
AND RESTORATION SUCCESS

BOOK REVIEWS

- 334 Forest Restoration in Urbanizing Landscapes: Interactions Between Land Uses and Exotic Shrubs, K. L. Borgmann and A. D. Rodewald
- 341 Hydrologic Regime Controls Soil Phosphorus Fluxes in Restoration and Undisturbed Wetlands, A. Aldous, P. McCormick, C. Ferguson, S. Graham, and C. Craft
- 348 An Ecologically Based Approach to Identifying Restoration Priorities in an Acid-Impacted Watershed, J. T. Petty and D. Thorne
- 358 Restoration of Arthropod Assemblages in a *Spartina* Salt Marsh following Removal of the Invasive Plant *Phragmites australis*, C. Gratton and R. F. Denno
- 373 Removal of Encroaching Conifers to Regenerate Degraded Aspen Stands in the Sierra Nevada, B. E. Jones, T. H. Rickman, A. Vazquez, Y. Sado, and K. W. Tate
- 380 Experimental Restoration of an Indigenous Hawaiian Grassland after Invasion by Buffel Grass (*Cenchrus ciliaris*), C. C. Daehler and E. M. Goergen
- 390 Introduction to the Special Section on Resource Heterogeneity and Restoration Success, D. R. Lane and K. D. Lejeune
- 391 Importance of Hydrologic and Landscape Heterogeneity for Restoring Bank Swallow (*Riparia riparia*) Colonies along the Sacramento River, California, K. C. Moffatt, E. E. Crone, K. D. Holl, R. W. Schlorff, and B. A. Garrison
-
- 403 Diminishing Spatial Heterogeneity in Soil Organic Matter across a Prairie Restoration Chronosequence, D. R. Lane and H. BassiriRad
- 413 Soil Heterogeneity Effects on Tallgrass Prairie Community Heterogeneity: An Application of Ecological Theory to Restoration Ecology, S. G. Baer, S. L. Collins, J. M. Blair, A. K. Knapp, and A. K. Fiedler
-
- 425 Wetland Restoration Handbook for Wisconsin Landowners, 2nd Edition, Authors: A. Thompson and C. Luthin, Reviewer: Q. Carpenter
- 426 Conservation Biology: Foundations, Concepts, Applications, Author: F. van Dyke, Reviewer: D. Boorse, and A Workbook in Conservation Biology: Solving Practical Problems in Conservation, Editor: F. van Dyke, Reviewer: D. Boorse

SOIL SCIENCE

An Interdisciplinary Approach to Soils Research

MAY 2005

CONTENTS

Vol. 170 No. 5

- EFFECTS OF PARTICLE SIZE DISTRIBUTION AND WATER CONTENT AT COMPACTION ON SATURATED HYDRAULIC CONDUCTIVITY AND STRENGTH OF HIGH SAND CONTENT ROOT ZONE MATERIALS
J. J. Henderson, J. R. Crum, T. F. Wolff, and J. N. Rogers, III 315
- CD²⁺EDTA²⁻ ADSORPTION TO WEATHERED SHALE-LIMESTONE SAPROLITE: MODELING THE ADSORPTION MECHANISM AND EFFECT OF AL-OXIDE CO-DISSOLUTION ON FE-OXIDE DISSOLUTION DYNAMICS
Jin-Ping Gwo and Philip M. Jardine 325
- COMPETITIVE ADSORPTION BETWEEN ORTHOPHOSPHATE AND OTHER PHOSPHATES ON ALUMINUM HYDROXIDE
Xiao-Hong Guan, Guang-Hao Chen, and Chii Shang 340
- NITRAPYRIN DELAYS DENITRIFICATION ON MANURED SOILS
Francisco J. Calderón, Gregory W. McCarty, and James B. Reeves, III 350
- EVALUATION OF MATURITY AND STABILITY OF PRUNING WASTE COMPOST AND THEIR EFFECT ON CARBON AND NITROGEN MINERALIZATION IN SOIL
M. Benito, A. Masaguez, A. Moliner, N. Arrigo, R. M. Palma, and D. Effron 360
- DELINEATING POTENTIAL MANAGEMENT ZONES FOR COTTON BASED ON YIELDS AND SOIL PROPERTIES
J. L. Ping, C. J. Green, K. F. Bronson, R. E. Zartman, and A. Dobermann 371
- FLY ASH AS A LIMING MATERIAL FOR CORN PRODUCTION
D. D. Tarkalson, G. W. Hergert, W. B. Stevens, D. L. McCallister, and S. D. Kachman 386
- BOOKS RECEIVED 399

Soil Science is now accepting for publication announcements of appropriate meetings. Please send meeting announcements to: *Soil Science*, Lippincott Williams & Wilkins, 351 West Camden Street, Baltimore, MD 21201-2436. Announcements must include: date, name of conference, location, and contact address/phone/e-mail.

Southwestern Naturalist

Vol. 50, no. 2

CONTENTS

June 2005

Plant associations of El Vizcaíno Biosphere Reserve, Baja California Sur, Mexico. <i>Manuel Peinado, José Delgadillo, and Juan L. Aguirre</i>	129
Testing a vicariance model to explain haplotype distribution in the psammophilic scorpion <i>Paruroctonus utahensis</i> . <i>M. C. Estep, Mary U. Connell, Richard N. Henson, Zack E. Murrell, Randall L. Small</i>	150
Size-selective predation by inland silversides on an exotic cladoceran, <i>Daphnia lumholzi</i> . <i>Philip W. Lienesch and Moshe Gophen</i>	158
Freshwater turtle assemblages in central Oklahoma farm ponds. <i>Paul A. Stone, Sara M. Powers, and Marie E. Babb</i>	166
Comparative escape behavior of Chihuahuan Desert parthenogenetic and gonochoristic whiptail lizards. <i>Paul Hotchkiss and Hector Riveroll, Jr.</i>	172
Reproductive cycle of <i>Sceloporus grammicus</i> (Squamata: Phrynosomatidae) from Teotihuacán, México. <i>Elsa Jiménez-Cruz, Aurelio Ramírez-Bautista, Jonathon C. Marshall, Miguel Lizana-Avia, and Adrián Nieto-Montes de Oca</i>	178
Long-distance movements of juvenile Mohave ground squirrels, <i>Spermophilus mohavensis</i> . <i>John H. Harris and Philip Leitner</i>	188
Examining patterns of bat activity in Bandelier National Monument, New Mexico, by using walking point transects. <i>Laura E. Ellison, A. Lance Everette, and Michael A. Bogan</i>	197
Packrat middens and late Holocene environmental change in southwestern Colorado. <i>Steven D. Emslie, Mark Stiger, and Ellen Wambach</i>	209
Sensory modality used by coyotes in responding to antipredator compounds in the blood of Texas horned lizards. <i>Wade C. Sherbrooke and J. Russell Mason</i>	216
Track count calibration to estimate density of white-tailed deer (<i>Odocoileus virginianus</i>) in Mexican dry tropical forest. <i>Salvador Mandujano</i>	223
Kansas Gap Analysis: the importance of validating distributional models before using them. <i>A. Townsend Peterson</i>	230

Notes

Aquatic invertebrates of Cuatro Ciénegas, Coahuila, México: natives and exotics. <i>Eric C. Dinger, Adam E. Cohen, Dean A. Hendrickson, and Jane C. Marks</i>	237
Status of <i>Dionda diaboli</i> and report of established populations of exotic fish species in lower San Felipe Creek, Val Verde County, Texas. <i>Hernán López-Fernández and Kirk O. Winemiller</i> ..	246
Helminth parasites of four species of anurans from Nuevo Leon, Mexico. <i>Virginia León-Régagnon, Elizabeth A. Martínez-Salazar, David Lazcano-Villareal, and Rogelio Rosas-Valdez</i>	251
Life history characteristics support separate origins of D-designation color pattern classes in parthenogenetic <i>Aspidoscelis tessellata</i> (Squamata: Teiidae). <i>Harry L. Taylor, James M. Walker, James E. Cordes, and Glenn J. Manning</i>	258
Reproductive characteristics of two syntopic, widely foraging lizards, <i>Aspidoscelis deppii</i> and <i>Aspidoscelis guttata</i> from Oaxaca, México. <i>Vicente Mata-Silva and Aurelio Ramírez-Bautista</i> ..	262
Herpetofaunal inventory of Fort Wolters in north-central Texas. <i>Wade A. Ryberg and Lee A. Fitzgerald</i>	267
Tree swallow entangled on teddy bear cholla spines. <i>James W. Cain III and Brian D. Jansen</i> .. .	272
Westward expansion of the tawny-bellied cotton rat (<i>Sigmodon fulviventris</i>) in west-central New Mexico. <i>Keith Geluso, Justin D. Hoffman, Vikki A. Ashe, Jeremy A. White, and Michael A. Bogan</i> ..	273
Black bears forage on army cutworm moth aggregations in the Jemez Mountains, New Mexico. <i>Jonathan D. Coop, Charles D. Hibner, Aaron J. Miller, and Gregory H. Clark</i>	278
Albert Patrick Blair, 1913–2004	282
Announcements	284

Cover: Design by Jane Van Auken for the 51st Annual Meeting held in April 2004.

RECEIVED
JUN 28 11 51 AM '05
NEWBORN COLLEGE

UNIVERSITY OF
COLORADO LAW REVIEW

Volume 76, Number 3

2005

CONTENTS

ARTICLES

- Navigating Dangerous Constitutional Straits: A Prolegomenon on the Federal Marriage Amendment and the Disenfranchisement of Sexual Minorities*
Ronald J. Krotoszynski, Jr. and E. Gary Spitko..... 599
- P2P and the Future of Private Copying*
Peter K. Yu 653
- Judicial Modesty and the Jury*
Suja A. Thomas 767

COMMENTS

- Warning Bell: The Inherent Difficulties of Responding to Student-on-Student Sexual Harassment in Colorado Middle Schools*
M. Brent Case 813
- The Dilemma of Expressive Punishment*
William DeFord 843
- Begging to Defer: Lessons in Judicial Federalism from Colorado Search-and-Seizure Jurisprudence*
Richard C. Miller 865